

REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER 93-145

NPDES PERMIT NO. CA0029963

WASTE DISCHARGE REQUIREMENTS FOR:

FMC CORPORATION
GROUND SYSTEMS DIVISION
328 WEST BROKAW ROAD
SANTA CLARA, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

Site Description

1. FMC Corporation - Ground Systems Division (hereinafter referred to as a discharger) - presently owns and operates facilities located on a 27.1 acre site collectively referred to as 328 West Brokaw Road, Santa Clara, Santa Clara County (hereinafter referred to as the Site). See Figure 1 for location map. The Site is bounded by the Southern Pacific Transportation Company railroad right of way and railroad maintenance yard to the south, West Brokaw Road to the west, Coleman Avenue to the north, and the city boundaries of Santa Clara and San Jose to the east. See Figure 3 for site map.

Regulatory Status

2. FMC has applied to discharge treated groundwater for its site cleanup with a new NPDES permit. FMC is considered to be a discharger because of its ownership, occupancy and use of the Site from 1953 to present, during which time, releases of chemicals have occurred.

Enforcement History

3. The discharger is currently under Site Cleanup Order (SCO) No. 91-164 adopted by the Board on November 20, 1991 for the FMC Corporation - Ground Systems Division (FMC) 328 West Brokaw Road facility. The discharger submitted an Interim Remedial Alternatives Report in July 1992 in accordance with Provision C.1.c. of SCO No. 91-164 and received approval of same on March 4, 1993. The discharger also submitted a Remedial Investigation Report dated May 1993, to the Board in accordance with Provision C.1.d. of SCO No. 91-164. The adjacent FMC 333 West Brokaw Road facility is under SCO No. 91-020 adopted February 20, 1991. SCO No. 92-132 adopted on October 21, 1992, and SCO No. 93-018 adopted on February 17, 1993, are amendments to SCO No. 91-020.

Site History

4. The site was originally under agricultural use until 1966 when the discharger built Plant 12. There are two general soil source areas impacting the site's groundwater (Remedial Investigation Report, May 1993). Figure 4 shows well locations to depict these sources. An approximately 5 acre area was used

for land disposal of lead and zinc chromate paint sludges, zinc phosphate sludge, metal surface treatment sludge, waste oil, solvents and paint thinners. Dumping here ceased in about 1966. Included within the 5 acre area is a formerly unlined surface impoundment, which was in operation between the 1950s and 1979. Sixty thousand gallons/year of sludges, paints, solvents, oils and diesel were disposed here. The surface impoundment was closed in 1981, filled and paved. From 1981 to the present a drummed waste storage area for the storage, staging and pick-up and disposal of hazardous wastes has operated at this location. A second area of concern is located under Plant 12.

Groundwater Pollution

5. Groundwater pollution is principally by trichloroethene (TCE). TCE has been detected at the highest concentrations in ground water monitoring well 219A and decreases in concentration in wells downgradient toward West Brokaw Road, Plant 22 and Coleman Avenue. TCE has been detected at concentrations as high as 24 ppm in well 219A and in the downgradient portion of the plume at Plant 22 at 2.7 ppm in well W-12A. Other VOCs that have been detected are 1,1,1-trichloroethane(TCA), 1,1-dichloroethene (1,1-DCE), 1,1-dichloroethane (1,1-DCA), and 1,2-dichloroethene (1,2-DCE).

The Groundwater Treatment System

6. The following constitutes the groundwater treatment system

- a. Interim Remedial Action

The approved interim remedial actions for groundwater pollution are to; (1) Intercept the pollutant plume between the 328 and 333 West Brokaw Road sites by construction of an extraction trench; and (2) prevent the migration of the plume beyond FMC's northern property boundary along Coleman Avenue by installing extraction wells along the leading edge of the plume. The discharger has proposed these interim remedial actions to: intercept the A-1 and A-2 zones of the A aquifer; provide hydraulic containment of the downgradient portion of the plume (north of 333 West Brokaw facility); and, begin remediation of the upgradient portion of the plume.

- b. Extraction Trench

The extraction trench has been constructed perpendicular to the groundwater flow in the parking lot between West Brokaw Road and Plant 12. The trench keys into the clay underlying the A aquifer. Permeable backfill intercepts the full saturated interval of the A-2 and A-1 zones. Three sumps and four monitoring wells have been installed in the trench.

- c. Extraction Wells

A series of five wells have been constructed near Plant 22 parallel to the downgradient edge of the plume. The wells have screen lengths that fully penetrate the saturated interval. Two additional extraction wells were installed at Plant 12 along the southerly edge of the plume. These additional wells were installed to provide capture along the southern plume boundary.

d. Treatment

The discharger, as part of the permit application package, has evaluated three potential discharge options: reuse, discharge to the POTW, and; discharge regulated by an NPDES permit. Based on these options, the discharger has proposed that the most cost effective solution is to discharge the treated groundwater to surface waters. The groundwater pollutants, TCE, TCA, DCA and DCE, will be treated by a combined system of air stripping and resin adsorption. Although discharge will be primarily to the storm drain, the discharger will design the piping to facilitate various discharge options including discharge to the storm drain, irrigation supply, vehicle washing, reuse in the discharger's industrial wastewater treatment plant and reuse in the test track pond. The preferred option at this time is discharge to surface waters via storm drain. The proposed discharge will consist of the treated waste stream as permitted in this Order. Average flow is expected to be 150 gpm with a maximum flow of 200 gpm. The proposed discharge of the effluent stream will be to an on site storm drain tributary to the Guadalupe River, Alviso Slough and South San Francisco Bay. Figure 2 is the Groundwater Treatment Facilities showing influent and effluent sampling locations.

Basin Plan

7. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 17, 1986 and amended it on August 19, 1987, July 18, 1989, September 16, 1992, and October 21, 1992. This Order implements the water quality objectives for the Basin Plan.
8. The existing and potential beneficial uses of the surface water adjacent to and contiguous with Guadalupe River, Alviso Slough and South San Francisco Bay include:
 - a. Contact and non-contact water recreation
 - b. Wildlife habitat
 - c. Preservation of rare and endangered species
 - d. Estuarine habitat
 - e. Fish spawning and migration
 - f. Industrial service supply
 - g. Navigation
 - h. Ocean commercial and sport fishing
 - i. Shellfish
9. The Basin Plan prohibits discharge of wastewater which has "particular characteristics of concern to beneficial uses" (a) "at any point in San Francisco Bay south of the Dumbarton Bridge" and (b) "at any point where the wastewater does not receive a minimum initial dilution of at least 10:1 or into any nontidal water, dead end slough, similar confined water, or any immediate tributary thereof."
10. The Basin Plan allows for exceptions to the prohibitions referred to in the above when it can be demonstrated that a net environmental benefit can be derived as a result of the discharge.
11. Exceptions to the prohibitions referred to in the above are warranted for this discharge because the discharge is an integral part of a program to cleanup polluted groundwater and thereby produce an environmental benefit. Discharge of waste is a privilege, not a right. Authorization to discharge is conditioned upon the discharge complying with provisions of Division 7 of the California Water Code

and any more stringent effluent limitations necessary to implement water quality control plans, to protect beneficial uses, and to prevent nuisance. Compliance with this Order should assure this and limit any potential adverse changes in water quality due to the discharge. Should studies indicate chronic effects not currently anticipated, the Board will review the requirements of this Order based upon the section for Receiving Water Limitations, C.1.e.

12. The Basin Plan prohibits discharge of "all conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Board, to waters of the Basin." The discharger's groundwater extraction and treatment system and associated operation, maintenance, and monitoring plan constitutes an acceptable control program for minimizing the discharge of toxicants to waters of the State.
13. Effluent limitations and toxic effluent standards established pursuant to Sections 208(b), 301, 304, and 307 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharge.
14. Effluent limitations of this Order are based on the Basin Plan, State and U.S. Environmental Protection Agency (EPA) plans and policies, best available treatment economically available (BATEA), and best technical judgement. Also considered in the determination of effluent limits were the EPA Region IX draft guidance "NPDES Permit Limitations for Discharge of Contaminated Groundwater: Guidance Document", and the San Francisco Bay Regional Water Quality Control Board Internal Memorandum dated February 16, 1990, "Proposed NPDES Permit Limits For Common Organic Pollutants Found at Service Stations and Other Groundwater Cleanup Sites."
15. The discharge of extracted treated groundwater to surface waters from sites subject to cleanup may contain metals at concentrations that exceed the shallow water effluent limitations. The need to minimize the potential for aquatic toxicity due to elevated levels of metals must be balanced against several factors: the total mass loading from these discharges is relatively low; the cost of treatment may be excessive; and, the metals concentrations may be due natural occurrences of these metals in source formations.

CEQA

16. The issuance of waste discharge requirements for the discharge is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

Notifications

17. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.
18. The Board has notified the Discharger and interested agencies and persons of its intent under Division 7 of the California Water Code to prescribe waste discharge Requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

IT IS HEREBY ORDERED that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. The discharge of waste or hazardous materials in a manner which will degrade the water quality or adversely affect beneficial uses of the groundwaters or the State is prohibited.
2. The discharge shall be limited to treated groundwater from the 328 West Brokaw Road and 333 West Brokaw Road sites to include development, purging and hydraulic testing of wells and trenches.
3. Neither the treatment nor the discharge of waste shall create pollution, contamination, or nuisance, as defined by Section 13050 of the California Water Code.

B. Effluent Limitation prohibitions

1. Effluent shall not exceed 300,000 gallons per day.
2. The discharge of waste at the storm drain E-1, Figure 2, containing constituents in excess of the following limits is prohibited:

TABLE 1

Constituent	Instantaneous Maximum Limit (µg/l)
<u>VOC's</u>	
1,1,1-Trichloroethane	5.0
Tetrachloroethylene	5.0
Trichloroethylene	5.0
1,1-Dichloroethylene	5.0
1,2-Dichloroethane	0.5
Vinyl Chloride	0.5
1,2-Dichloroethylene isomers	5.0
1,1-Dichloroethane	5.0
1,1,2-Trichloroethane	5.0
Methylene Chloride	5.0
Chloroform	5.0
Total VOCs	10.0 ¹

INORGANICS

Arsenic	20.0
Cadmium	10.0 ²
Chromium (total)	11.0
Copper	20.0 ²
Cyanide	25.0
Lead	5.6 ²
Mercury	1.0
Nickel	7.1 ²
Selenium	5.0
Silver	2.3 ²
Zinc	58.0 ²

¹ Total of analytes detected by USEPA Method 601

² or as modified by hardness from Water Quality Objectives for Fresh Waters with Salinities Less Than 5 Parts Per Thousand.

3. The pH of the discharge of waste shall not exceed 8.5 nor be less than 6.5.
4. Toxicity: The survival of rainbow trout in 96-hour bioassay of the effluent for E-1 as discharged, shall be a median of 90% survival and a 90 percentile value of not less than 70%.

C. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:
 - a. Floating, suspended, or deposited macroscopic particulate matter or foam;
 - b. Bottom deposits or aquatic growths;
 - c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;
 - e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.
2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:
 - a. Dissolved oxygen: 5.0 mg/l minimum. The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation.
 - b. pH: The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH levels by more than 0.5 units.
 - c. Un-ionized ammonia: 0.025 mg/l (as N) Annual Median; 0.400 mg/l (as N) Maximum
3. This discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Clean Water Act or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. Provisions

1. The Discharger shall maintain a copy of this order at the project field office so as to be available at all times to project personnel.
2. Technical reports, submitted by the Discharger, in compliance with the Prohibitions, Specifications, and Provisions of this Order shall be submitted to the Board on the schedule specified herein. These reports shall consist of a letter report that includes the following:

- a. A summary of work completed since submittal of the previous report and work projected to be completed by the time of the next report;
 - b. Identification of any obstacles which may threaten compliance with the schedule of this Order and what actions are being taken to overcome these obstacles;
3. In the event of non-compliance with any Prohibition, Specification or Provision of this Order, written notification which clarifies the reasons for non-compliance and which proposes specific measures and a schedule to achieve compliance. This written notification shall identify work not completed that was projected for completion, and shall identify the impact of non-compliance on achieving compliance with the remaining requirements of this Order; and,
4. In the first self-monitoring report, an evaluation of the current ground water monitoring system and a proposal for modifications as appropriate.
5. Other than as authorized under this order, if any hazardous substance is discharged in or on any waters of the state, or discharged and deposited, or probably will be discharged in or on any waters of the state, the Discharger shall
 - a. Report such discharge to the following:
 - (1) This Regional Board at (510) 286-1255 on weekdays during office hours from 8 a.m. to 5 p.m.; and,
 - (2) The Office of Emergency Services at (800) 852-7550.
 - b. A written report shall be filed with the Regional Board within five working days and shall contain information relative to the following:
 - (1) The nature of waste or pollutant;
 - (2) The quantity involved and the duration of incident;
 - (3) The cause of spill;
 - (4) The estimated size of affected area;
 - (5) The corrective measures that have been taken or planned, and a schedule of these measures; and,
 - (6) The persons/agencies notified.
6. If the Discharger is delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order, the Discharger shall promptly notify the Executive Officer and the Board shall consider revision to this Order.
7. The Board considers the property owner and site operator to have a continuing responsibility for correcting any problems within their reasonable control which arise in the future as a result of this waste discharge.
8. These requirements do not authorize the commission of any act causing injury to the property of another or of the public, do not convey any property rights, do not remove liability under federal, state or local laws, and do not authorize the discharge of waste without the appropriate federal, state or local permits, authorizations, or determinations.

9. The discharger shall comply with the Self-Monitoring Program as adopted by the Board and as may be amended by the Executive Officer.
10. The discharger shall comply with all sections of this order immediately upon adoption by the Board.
11. The discharger shall also notify the Regional Board if the self-monitoring program results indicate, or if any discharge activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit.
12. This Order includes all items of the attached "Standard Provisions and Reporting Requirements" dated December 1986 except A.10, B.2, B.3, C.8, and C.11.
13. Any noncompliance with a requirement of this Order shall be reported as stated in section C.10 of the "Standard Provisions and Reporting Requirements" referred to in C.4. above.
14. This permit may be modified prior to the expiration date to include effluent limitations for toxic constituents determined to be present in significant amounts in the discharge through a more comprehensive monitoring program included as part of this order.
15. This Order expires November 19, 1998. The discharger must file a report of Waste Discharge in accordance with Title 23, Division 3, Chapter 9 of the California Code of Regulations no later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.
16. This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Clean Water Act, or amendments thereto, and shall become effective at the end of ten days from date of hearing provided the Regional Administrator, U. S. Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.
17. **TASK: PROPOSALS FOR THE DETERMINATION OF BACKGROUND METALS CONCENTRATIONS**

Submit a technical report acceptable to the Executive Officer which contains a proposal to determine the level of naturally occurring metals in the groundwater at the site. This study shall include, but need not be limited to, the sampling and analysis in this Self-Monitoring Plan, the location(s) of background groundwater samples to be obtained (sampling to be concurrent with the Self-Monitoring Plan), specification of the analytical methods for metals and the expected laboratory detection limits and QA/QC procedures.

COMPLETION DATE: March 31, 1994

18. **TASK: BACKGROUND METALS CONCENTRATIONS RESULTS**

Submit a technical report acceptable to the Executive Officer which contains the results of the groundwater metals study. The report shall include a comparison of background and affected A-level aquifer conditions to the shallow water discharge effluent concentration limits as indicated

in Table 1. Should results of the study show that natural background metals concentrations cause the effluent to exceed shallow water effluent limits, the discharger shall provide a technical and cost analysis of increased treatment to reduce mass loading of metals.

COMPLETION DATE: September 31, 1994

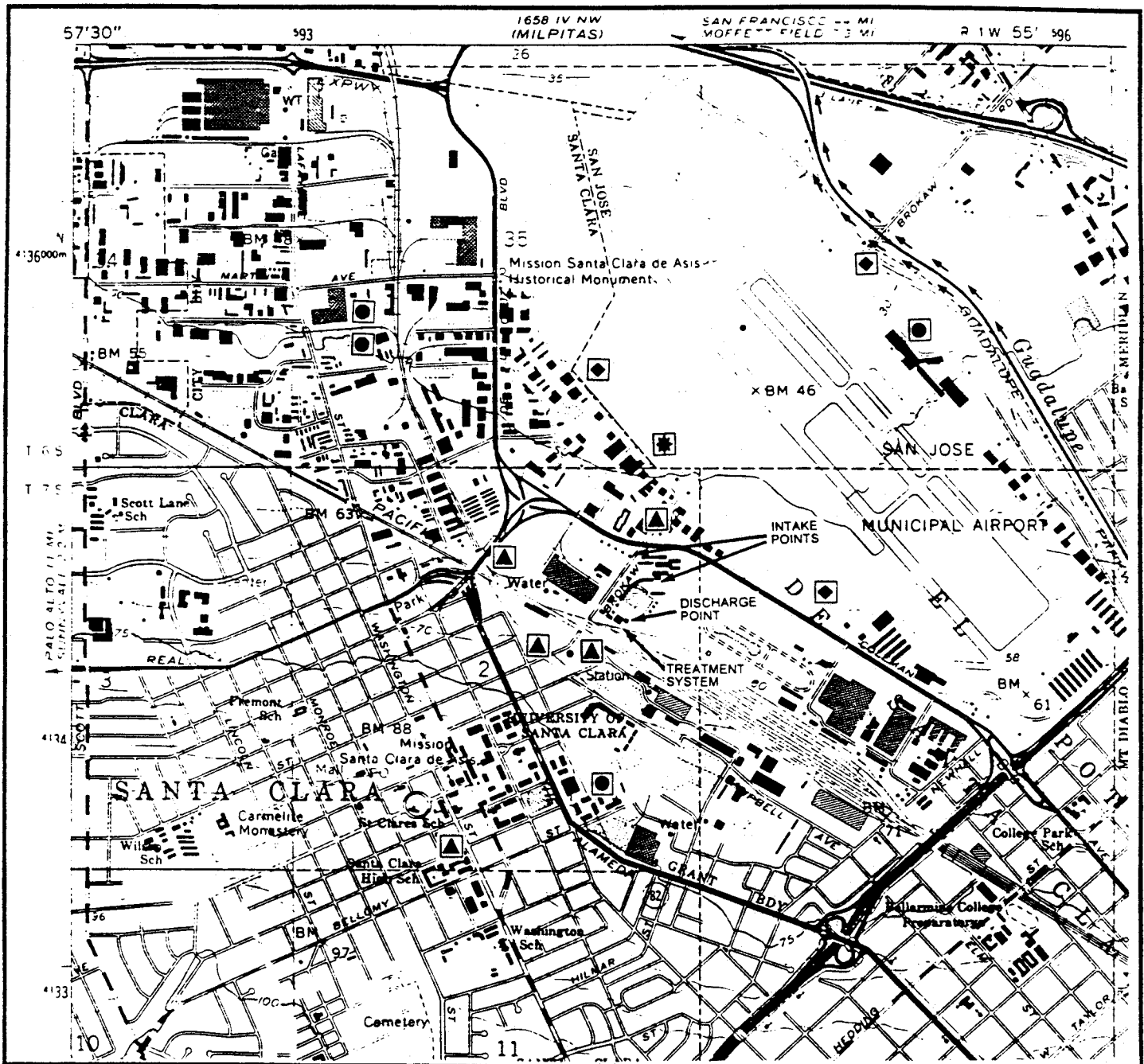
I, Steven R. Ritchie, Executive Officer do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on November 19, 1993.



STEVEN R. RITCHIE
Executive Officer

Attachments: Figure 1, Site Map
Figure 2, Groundwater Treatment Facilities
Figure 3, Facility Utilities Location
Figure 4, Monitoring Well and Soil Boring Locations
Standard Provisions and Reporting Requirements - December 17, 1986
Self-Monitoring Program

FIGURE 1
TOPOGRAPHIC MAP SHOWING
FACILITY LOCATION
FMC CORPORATION



Map Source: United States, Department of the Interior Geological Survey
San Jose West Quadrangle, California-Santa Clara Co.
7.5 Minute Series (Topographic)

LEGEND

- MUNICIPAL WELL
- INDUSTRIAL WELL
- AGRICULTURAL WELL
- UNKNOWN USE WELL

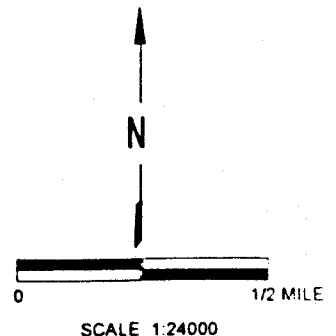
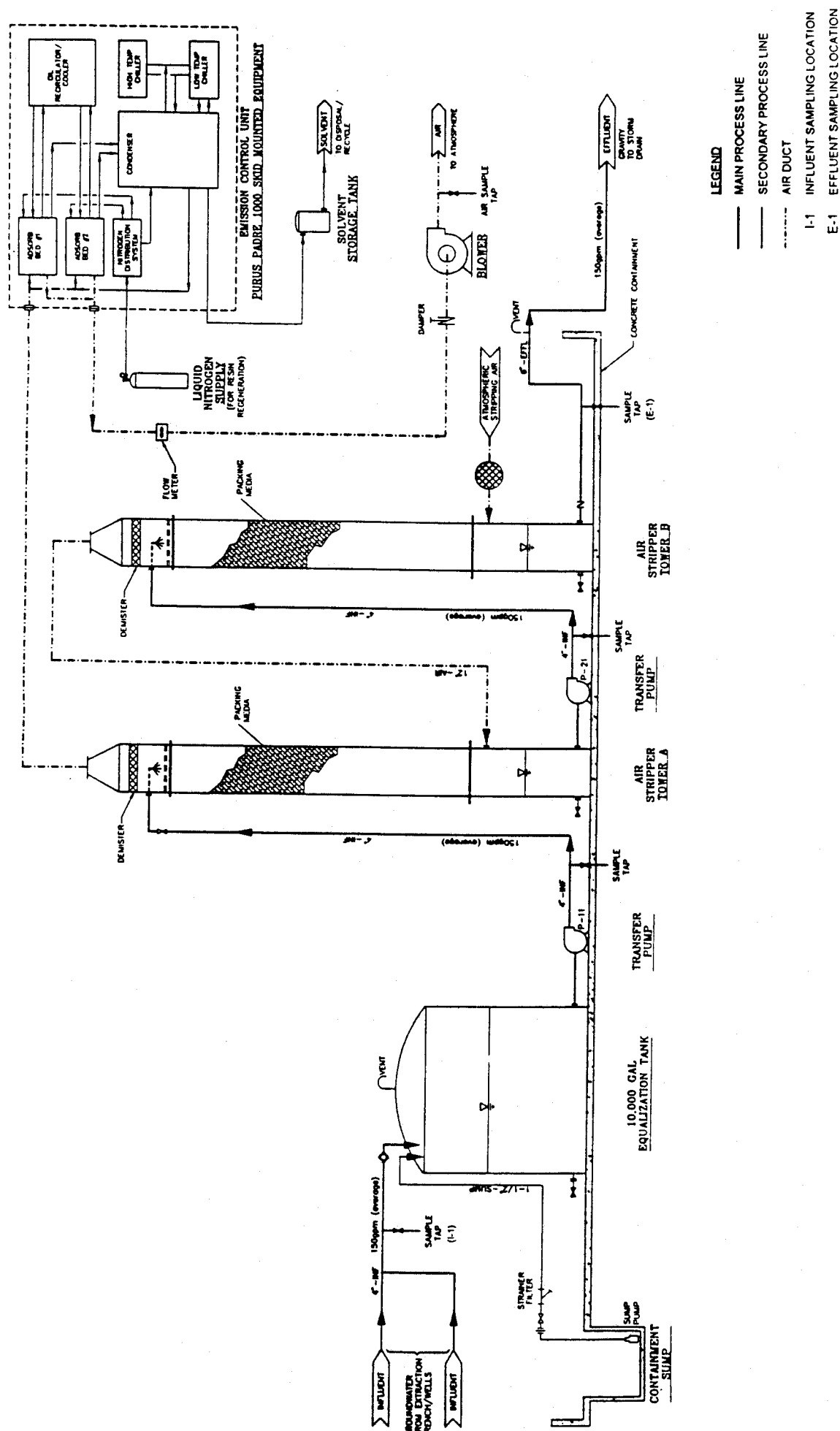
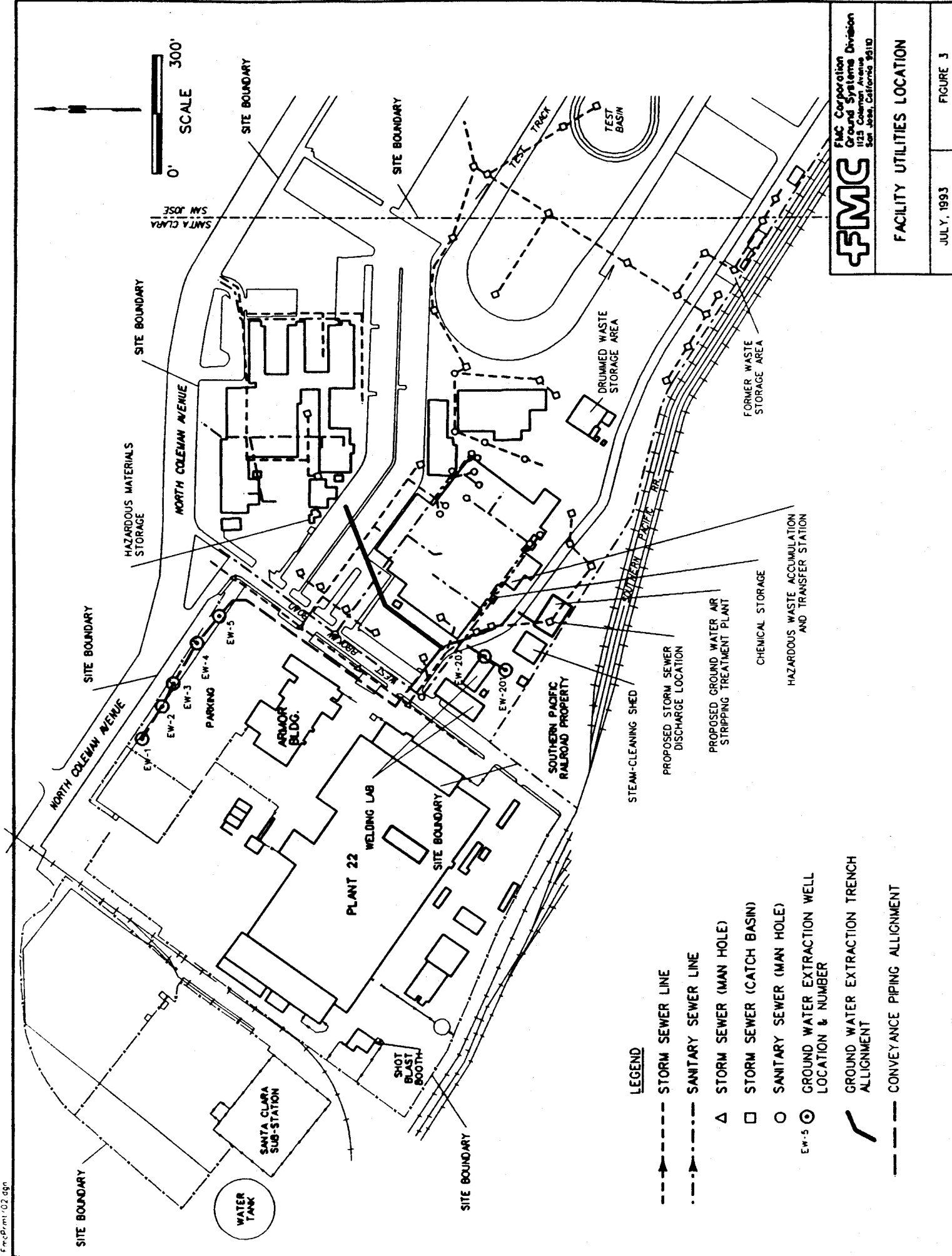
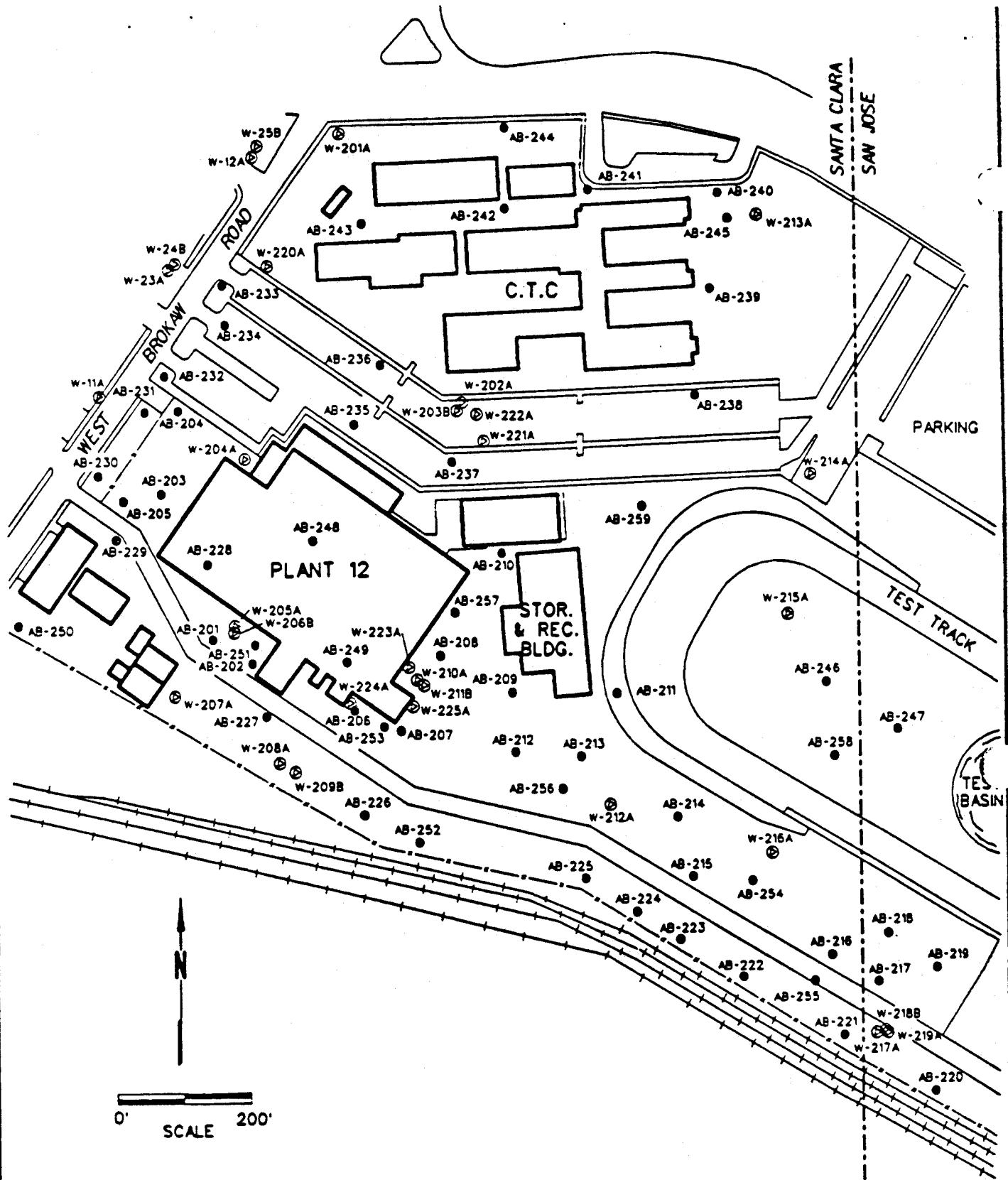


FIGURE 2
FMC
GROUNDWATER TREATMENT FACILITIES
PROCESS FLOW DIAGRAM







LEGEND

W-210A ⊕ GROUNDWATER MONITORING WELL

AB-214 ● SOIL BORING

FMC

Ground Systems Division
Post Office Box 387
San Jose, California 95103

MONITORING WELL AND
SOIL BORING LOCATIONS

SEP-91

FIGURE 4

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

FMC CORPORATION
328 WEST BROKAW ROAD
SANTA CLARA, SANTA CLARA COUNTY

NPDES NO. CA 0029963

ORDER NO. 93-145

CONSISTING OF

PART A

(Dated December 1986 and modified January 1987 including Appendices A through E)

and

PART B TENTATIVE

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT

Stations

Description

I-1

At a point in the extraction system immediately prior to inflow to the treatment unit.

B. EFFLUENT

Stations

Description

E-1

At a point in the discharge line immediately following treatment and prior to the effluent reaching the storm drain tributary of the Guadalupe River.

R-1

At a point in the Guadalupe River, greater than 100 feet but less than 200 feet downstream from the storm sewer discharge point into the stream.

II. SCHEDULE OF SAMPLING AND ANALYSIS

A. The schedule of sampling and analysis shall be that given in Table A (attached).

III. MISCELLANEOUS REPORTING

If any chemical additives other than the polyphosphate additives are proposed to be used in the treatment of extracted groundwater, it shall be reported thirty (30) days prior to their use and documented in the regular quarterly reports.

IV. MODIFICATION TO PART A

A. Deletions:


Sections D.1.a., D.2.a., D.2.f., D.2.g., D.2.h., D.3., E.1.e., E.3., E.4., E.5., and F.2.b.

B. Modifications:

1. D.2.a. Samples of effluent shall be collected at times coincident (same day) with influent sampling unless otherwise stipulated. The Regional Board or Executive Officer may approve an alternative sampling plan if it is demonstrated that expected operating conditions warrant a deviation from the standard sampling plan.
2. D.2.d If two consecutive samples of any one constituent or parameter monitored on a weekly or monthly basis in a 30 day period exceed the effluent limit or are otherwise out of compliance, or if the required sampling frequency is once per month or less and the sample or parameter exceeds the limit or is otherwise out of compliance, the discharger shall propose correction procedures for acceptance or approval by the Board or Executive Officer, on a case by case basis.
3. D.2.e. Within twenty-four (24) hours of receiving the analytic results indicating a violation of any instantaneous maximum limit, a confirmation sample shall be taken with analytic results known within twenty-four (24) hours. In the case that the same instantaneous limit is violated in the second sample, the discharge shall be terminated until the cause of the violation is found and corrected. Alternative methods of verifying and correcting violations of instantaneous maximum limits may be substituted with the approval of the Executive Officer.
4. F.2.a. Total flow shall be recorded continuously.
5. G.4. Written reports as required under G.4. shall be submitted based on a calendar quarter basis, not later than 30 days following the last day of the quarter.
6. G.4.b. The report format shall be in a form acceptable to the Executive Officer of the Regional Board.
7. G.4.e. The report format shall be in a form acceptable to the Executive Officer of the Regional Board. NPDES Discharge Monitoring Report, EPA Form 3320-1, is provided as guidance.
8. G.5. The annual report shall contain all data required for the fourth quarter in addition to summary data required for annual reporting. This report may be submitted in lieu of the report for the fourth quarter of a calendar year.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in the Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 93-XXX.
2. Was adopted by the Board on November 19, 1993
3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer or Regional Board.



STEVEN R. RITCHIE
EXECUTIVE OFFICER

Attachment: Table A

TABLE A
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	I-1	E-1	R-1
TYPE OF SAMPLE	G	G	G
Flow Rate (mgd)		Cont	
BOD, 5-day 20°, or COD (mg/l & kg/day)			
Chlorine Residual & Dosage (mg/l & kg/day)			
Settleable Matter (ml/1-hr. & ft ³ /day)			
Total Suspended Matter (mg/l)			
Total Dissolved Solids	Q	Q	Y
Oil and Grease (mg/l & kg/day)			
Bio-assay 96-hr % survival (flow- through or static)		Y	
Ammonia Nitrogen (mg/l & kg/day)		V	
Turbidity (NTU's)			
pH (units)	M	M	Y
Dissolved Oxygen (mg/l and % saturation)			
Temperature (°C)		M	Y
Apparent Color			
Arsenic (µg/l)		2M/Q/Y	Y
Cadmium (µg/l)		2M/Q/Y	Y
Chromium, Total (µg/l)		2M/Q/Y	Y
Copper (µg/l)		2M/Q/Y	Y
Cyanide (µg/l)		2M/Q/Y	Y
Lead (µg/l)		2M/Q/Y	Y
Mercury (µg/l)		2M/Q/Y	Y
Nickel (µg/l)		2M/Q/Y	Y
Selenium (µg/l)		2M/Q/Y	Y
Silver (µg/l)		2M/Q/Y	Y
Zinc (µg/l)		2M/Q/Y	Y

Sampling Station	I-1	E-1	R-1
TYPE OF SAMPLE	G	G	G
EPA 601	Y	M	
EPA 602			
EPA 624 ¹	Y	Y	
EPA 625 ²			
EPA 8015 (Modified TPH and Diesel)			

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
C-24 = 24 hr. composite
Cont. = continuous sampling
DI = depth integrated sample
BS = bottom sediment sample
O = observation

TYPES OF STATIONS

I = intake or influent stations
E = effluent sampling stations
D = discharge point sampling stations
R = receiving water sample stations
L = basin and/or pond levee stations
B = bottom sediment station
G = groundwater station

FREQUENCY OF SAMPLING

E = each occurrence
H = once each hour
D = once each day
W = once each week
M = once each month

Y = once each year

2/H = twice per hour
2/W = 2 days per week
5/W = 5 days per week
2/M = 2 days per month
2/y = once in March and once in
September
Q = quarterly, once in March, June,
September, and December

2H = every 2 hours
2D = every 2 days
2W = every 2 weeks
3M = every 3 months
Cont = continuous

V = varies; analysis for total
ammonia nitrogen and unionized
ammonia calculated whenever fish
bioassay results fail to meet the
specified percent survival rate

2M/Y = monthly for first 2 months
yearly thereafter
M/Y = monthly first year, yearly
thereafter
Q/Y = concomitant with other
quarterly analysis, yearly thereafter
2M/Q/Y = monthly for first 2
months, quarterly for next 3
quarters, yearly thereafter

¹ In lieu of 601 analysis and coincident with 625 analysis

² In lieu of 601 analysis and coincident with 624 analysis